CLAIMS:

1. A method of operating a drain pump in a laundry washing machine during the drain phase of the wash cycle to reduce pump blockages comprising the steps of: (a) starting the pump and running it for a first period of time to produce a discharge of a given flow rate, (b) stopping the pump rapidly and leaving the pump stopped for a second period of time which is less than 10% of said first period of time, and repeating steps (a) and (b) for the duration of said drain phase, said second period of time being such that the flow rate reduces substantially to zero.

2. A method of operating a drain pump in a laundry washing machine during the drain phase of the wash cycle to reduce pump blockages characterised in that:

(a) the pump is started and run for a first period of time to produce a discharge of a given flow rate,

(b) the pump is stopped for a second period of time which is less than 10% of said first period of time, said second period of time being such that the flow rate reduces substantially to zero, and

(c) steps (a) and (b) are repeated for the duration of said drain phase.

3. A method according to either of claims 1 or 2 wherein said second period of time is between 10% and 1% of said first period of time.

4. A method according to any one of the preceding claims wherein the first period of time is approximately 10 seconds and the second period of time is approximately 200 milliseconds.

5. A method according to any one of the preceding claims wherein said pump is driven by an AC induction motor, during said first period of time said motor is supplied with full wave alternating current and during said second period of time is supplied with half wave alternating current.

6. A laundry washing machine including a drain pump operated in accordance with the method of any one of claims 1 to 5.

7. A method of braking a top loading laundry washing machine spin tub wherein said spin tub is driven by an electronically commutated DC motor, wherein the commutation devices are connected to a DC power supply and have free-wheeling diodes connected in parallel therewith, and wherein said washing machine includes other components having inductive windings,

characterised in that:

commutation of power to the motor windings is terminated,

the voltage of the DC power supply is monitored,

and when the DC power supply voltage exceeds a pre-determined value the inductive winding of an unused component in said machine is connected across said DC power supply until the DC power supply voltage reduces below said pre-determined value.

8. A method according to claim 7 wherein said unused component is a water pump powered by a single phase induction motor, the winding of which is electronically commutated from said DC power supply by bridge connected switching devices, said switching devices are controlled by a microprocessor, the DC power supply voltage is monitored by said microprocessor and said microprocessor causes said switching devices to connect the winding of said pump motor across said DC power supply.

9. A top loading laundry washing machine having a spin tub which is braked according to the method of either one of claims 7 or 8.

10. A method of powering on and off a laundry washing machine where power is consumed in the form of direct current using a switched mode power supply of the type described in Australian Patent 651408 characterised in that:

an active switching device connected between the base of the lower switch in the motor bridge drive used as part of said switched mode power supply and the lower voltage rail is switched on by a latching circuit to cause the DC power supplies in said machine to be disabled,

the latching circuit comprises a capacitor charged from the high voltage rail for said laundry machine motor in parallel with a transistor biased from the switched mode power supply low voltage rail, and

a push button normally off switch connected in parallel with said capacitor is used to discharge said capacitor to disable said latching circuit to thereby enable the laundry machine DC power supplies.

11. An optocoupler drive circuit for the high side of a totem pole power transistor pair in a bridge circuit for commutating a motor characterised in that the optocoupler does not use a logic inverter on the output side and the optocoupler transistor is controlled to limit the speed of turn off and thus the speed of turn on of the upper power transistor in the totem pole.

12. A laundry washing machine including a wash bowl drain pump characterised in that:

said pump is driven by a variable speed motor which in turn is driven by a variable frequency pulse width modulated inverter,

and the pump motor frequency is decreased at low bowl water levels to reduce the effects of ventilation.

13. A laundry machine according to claim 12 wherein the inverter pulse width modulated duty cycle is increased on pump start up and reduced upon normal pump frequency being achieved.

14. A laundry machine according to either of claims 12 or 13 wherein the inverter duty cycle is varied as an inverse function of the mains voltage supplying the machine to ensure constant motor torque independent of mains voltage.